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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,160	12/12/2003	Sridhar Balasubramanian	03-1840	1647
7590 LSI Logic Corporation Legal Department - IP 1621 Barber Lane, MS D-106 Milpitas, CA 95035			EXAMINER GU, SHAWN X	
			ART UNIT	PAPER NUMBER
			2189	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/16/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/735,160

Applicant(s)

BALASUBRAMANIAN, SRIDHAR

Examiner

Shawn Gu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-13 and 15-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-13 and 15-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This Office action is in response to the Appeal Brief and the amendment filed on 25 October 2006. Claims 1, 3-13, and 15-20 are pending. Claims 2 and 14 are cancelled. All objections and rejections not repeated below are withdrawn. The prosecution is reopened due to newly introduced grounds of rejection and the supporting art.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3-12, 15 and 18-20 are rejected under U.S.C. 102(a) as being unpatentable over Coombs [US 2003/0177149 A1] (hereinafter "Coombs") and Linux 2.0 Manual Page for the Command "mount" (hereinafter "Linux").

Per claims 1, 12 and 18, Coombs teaches a storage controller (Fig 1, combination of CPU 12, Device Controller 20, Memory 14, Network Controller 18 and I/O Controller 16), comprising:

a processor (Fig 1, CPU 12);

a memory (Fig 1, Memory 14) electrically coupled to the processor;

an externally accessible socket interface (Fig 1, must be in Device Controller 20 or I/O Controller 16), wherein the externally accessible socket interface provides an electrical connection to the processor;

backup parameters, set by an operator, that define how a backup operation will be executed (full backup or incremental backup, user defined time and frequency, see Pg. 2, Para. [0027] and [0028] and Pg. 3, Para. [0029]-[0032]));

invoking means for invoking a backup operation using the backup parameters (the backup method and parameters described above are used in backup operations, see Fig. 2, 3a and 3b, also see page 4, paragraph 37, line 2, determine "the type of backup"); and

responsive to a given event (Linux mount command entered by the user, mount is a standard system command in the Linux system, see Coombs, page 2, paragraph [0026]):

determining means for determining if a removable non-volatile memory module is connected to a first storage controller (backing up data to the removable device requires determining whether the device is coupled to the processor or not, see Pg. 2, Para.

[0022], [0027] and [0028]; also the Linux mount command determines whether the mount is successful, a successful mount indicates connection, a failed mount indicates unconnected non-volatile memory module); and

executing the backup operation to store configuration information ("system configuration files", see Pg. 2, Para. [0027] and [0028]) from the first storage controller to the removable non-volatile memory module (see Pg. 2, Para. [0027] and [0028]).

Coombs does not specifically teach that executing the backup operation is responsive to the removable non-volatile memory module being connected to the first storage controller. However, Coombs teaches the use of the Linux operation system as the platform for the disclosed invention (see Coombs, page 2, paragraph [0026]), and the Linux system includes the "mount" command, which includes an "error" mount option which defines the system behavior when an error is encountered during mount (see Linux, pages 7 and 8). The system behaviors include (1) kernel panic and system halt, (2) remount the disk as read-only (which would prevent any writes or backups to the disk), and (3) marking the filesystem as erroneous. In all cases the user is informed of any error conditions with error messages and can choose not to perform any backup on the mountable disk. If this option is used by the user performing the mount process, then clearly a determination is made of the proper mounting of the device by the presence or absence of the error condition and error message. Using this option enables the user to receive an indication of the status of the mounting process and determine the next step of operation based on the indication. It is clear that a backup process on a disk that is not mounted successfully would result in a failed backup.

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Therefore, it would have been obvious to one ordinarily skilled in the art to use the “error” option taught by Linux in Coombs’ system in order to enable to the user to receive an indication of the status of the mounting process and determine whether to perform the backup process or not.

It is also clear that claim 12’s storage controller performs the method of claim 1, which also substantially discloses claim 18’s apparatus.

Per claim 3, Coombs in view of Linux further teaches the given event is a command that was entered by an operator through one of interface software (the Linux “mount” command).

Per claims 4 and 19, Coombs further teaches responsive to a restore event, restoring the configuration information from the removable non-volatile memory module to the first storage controller (“restore to the same storage device from which it was originally copied”, see Pg. 5, Para. [0054]).

Per claim 5, Coombs further teaches the restore event is a command that was entered by an operator through one of interface software (GUI and computer interface, see Pg. 5, Para. [0055] and [0056]) and a boot menu console (Linux must have a boot menu console, see Pg. 2, Para. [0026]).

Per claims 6 and 7, Coombs further teaches disconnecting the removable non-volatile memory module from the first storage controller and connecting the removable non-volatile memory module to a second storage controller (restoring the backup in the removable disk to a second storage device must be performed by disconnecting the disk from the first storage controller and connecting the disk to a second storage controller, see Pg. 5, Para. [0054]).

Per claims 8 and 20, Coombs further teaches responsive to a restore event, restoring the configuration information from the removable non-volatile memory module to the second storage controller (restore to a second device, see Pg. 5, Para. [0054]).

Per claim 9, Coombs further teaches the restore event is a command that was entered by an operator through one of interface software (GUI and computer interface, see Pg. 5, Para. [0055] and [0056]) and a boot menu console (Linux must have a boot menu console, see Pg. 2, Para. [0026]).

Per claim 10, Coombs further teaches determining whether the configuration information is compatible with the second storage controller ("verification step", see Pg. 4, Para. [0040], this step is applied to the backups, wherein a determination is made on which backup is later preferably used as parent backup when restoring to a second storage device, see Pg. 5, Para. [0057] and Fig. 4); and

responsive to the configuration information not being compatible with the second storage controller, notifying an operator of incompatible configuration information ("A backup that does not pass verification ... is preferably not used as a parent backup" implies notification of incompatibility, see Pg. 4, Para. [0040] and Fig. 4).

Per claims 11 and 15, Coombs further teaches the configuration includes at least one of configuration data, firmware, bootware image, and component summary data (system configuration files, see Pg. 2, Para. [0027] and [0028]).

4. Claims 13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coombs [US 2003/0177149 A1] and Linux, in further view of Bell [5,410,707] (hereinafter "Bell").

Per claim 13, Coombs does not specifically teach that the externally accessible socket interface is a Personal Computer Memory Card International Association (hereinafter "PCMCIA") card slot. However, Bell teaches a storage controller which backs up data to a non-volatile memory module through a PCMCIA card slot (see Bell, Col. 4, Ln. 35-43). Since Coombs teaches backing up data to a non-volatile memory module as describe above, it would have been obvious to one ordinarily skilled in the art at the time of the Applicant's invention to combine Bell's PCMCIA card slot to Coombs' storage controller, in order to enable backups to non-volatile memory modules that are compatible to PCMCIA standard.

Per claim 16, Coombs does not specifically teach that the removable non-volatile memory module is a flash memory module, although it does teach using flash memory to store configuration data (see Pg. 2, Para. [0024], [0027] and [0028]). Therefore, it would have been obvious to one ordinarily skilled in the art at the time of the Applicant's invention to use a flash memory as the removable non-volatile memory module taught by Coombs, since flash memory provides the advantages over removable hard disks in terms of size and easy of transportability. Furthermore, Bell teaches a storage controller which backs up data to a removable non-volatile memory module that is a flash memory module (see Bell, Col. 4, Ln. 10-17), and it would also have been obvious to one ordinarily skilled in the art at the time of the Applicant's invention to combine Bell's flash memory to Coombs teaching in order to reduce the size and improve the transportability of the backup device.

5. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Coombs [US 2003/0177149 A1], Linux and Bell [5,410,707], in further view of Ban [5,404,485] (hereinafter "Ban").

Per claim 17, Coombs and Bell do not specifically teach that the flash memory module has a flash file system format for storing data. However, Ban teaches a flash memory module that uses a flash file system format (Col. 1, Ln. 5-10) for providing compatible data management with existing operating systems (Col. 1, Ln. 29-49).

Therefore, it would have been obvious to one ordinarily skilled in the art at the time of the Applicant's invention to combine Ban's teaching with those of Coomb's and Bell's in order to provide compatible data management on the flash memory with existing operating systems.

Response to Arguments

6. Applicant's arguments with respect to claims 1, 3-13 and 15-20 have been considered but are moot in view of the new ground(s) of rejection. This Office action is not made final as the Examiner introduced new grounds of rejection.

Applicant's first argument, on page 12, paragraph 6, and page 13 that "Coombs does not teach invoking and executing a backup operation, where invoking a backup operation is different from executing a backup operation" is clearly erroneous. The limitation "where invoking a backup operation is different from executing a backup operation" is not stated in any of the claims 1, 12 or 18 and should not be used to traverse the rejection of these claims.

Assuming, for the sake of argument, that the said limitation was presented in claims 1, 12 and 18, Coombs clearly teaches the claims in full. The Applicant is reminded to note that the steps described in the claims are not performed in any predefined order, and the step of "invoking a backup operation ..." is not clearly defined to be a step that takes place before the "given event" and the "determining" steps, it is merely a step performed by the method that can be taken in any order with regard to the other steps. It could in all likelihood be a step that takes place after "a given event" and

before a “determining” step and still allows one ordinarily skilled in the art to interpret the claims without deviating from the scope of the claims. Therefore, the Applicant’s argument “According to Applicant’s claims, a backup operation is first invoked ... invoking a backup operation is not the same as executing the backup operation”, presented in page 13, paragraph 4 is not relevant in view of the claim language.

With regard to the meaning of “invoking a backup operation”, the Applicant is reminded to note that the term “invoking” can be broadly interpreted as any process that starts the backup process/procedure that precedes and leads to the backup. Whether it is a backup instruction, a user giving a command, or any other similar process, the backup execution is “invoked”. The Applicant appears to be giving the term “invoking” a definition that is not supported by the actual claim language. Coombs teaches an invoking step, as distinguished from an “executing” step. In paragraph 37 on page 4, line 2, Coombs teaches determining “the type of backup”. This is a broad example of “invoking” a backup process. Compare this to paragraph 38, lines 13-15, where the backup process is actually “executed” in that files/data/content are stored to device 24. Basically, any part of the procedure prior to actually copying the files to device 24 should be considered part of “invoking” the backup.

To further demonstrate that Coombs teaches the step of “invoking a backup operation”, the Applicant is reminded to note that Coombs teaches “performing a full or incremental backup” (see page 4, paragraph [0038]) of “system configuration files and user files” (see page 2, paragraph [0028]) on a “mountable disk drive” (see page 2, paragraph [0022]) mounted on an operating system such as a LINUX operating system

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(see page 2, paragraph [0026]), and Coombs backup method is implemented by software as backup processes, management processes and restore processes (see page 2, paragraph [0026]). In light of these disclosures, there clearly must be an invoking step (calling the backup process or backup thread and placing the process in a wait queue are standard procedures in operation systems such as LINUX), and a separate executing step (the actual wakening and running of the backup process by the LINUX operating system), where invoking and executing are different operations. Therefore, the Applicant's first argument is erroneous in view of both interpretations of the step "invoking a backup operation".

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shawn Gu whose telephone number is (571) 272-0703. The examiner can normally be reached on 9am-5pm, Monday through Friday.

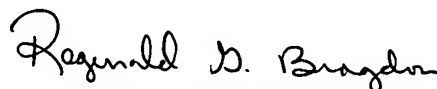
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Reginald Bragdon can be reached on (571) 272-4204. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Shawn X Gu
Patent Examiner
Art Unit 2189

8 January 2007



REGINALD BRAGDON
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100